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GUIDES TO AEROSPACE RESEARCH AND DEVELOPMENT IN NATO
COUNTRIES(U) ADVISORY GROUP FOR AEROSPACE RESEARCH AND
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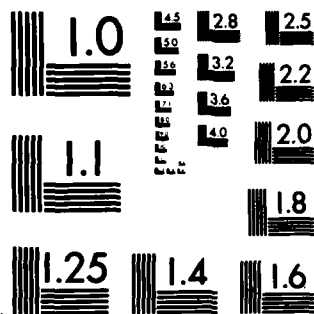
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ADVISORY GROUP FOR AEROSPACE RESEARCH & DEVELOPMENT

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AGARD REPORT No. 718

Guides to Aerospace Research and Development in NATO Countries - Bibliography

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 ADVISORY GROUP FOR AEROSPACE RESEARCH AND DEVELOPMENT
 (ORGANISATION DU TRAITE DE L'ATLANTIQUE NORD)

AGARD Report No.718
 GUIDES TO AEROSPACE RESEARCH AND DEVELOPMENT
 IN NATO COUNTRIES – BIBLIOGRAPHY

by

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The mission of AGARD is to bring together the leading personalities of the NATO nations in the fields of science and technology relating to aerospace for the following purposes:

- Exchanging of scientific and technical information;
- Continuously stimulating advances in the aerospace sciences relevant to strengthening the common defence posture;
- Improving the co-operation among member nations in aerospace research and development;
- Providing scientific and technical advice and assistance to the North Atlantic Military Committee in the field of aerospace research and development;
- Rendering scientific and technical assistance, as requested, to other NATO bodies and to member nations in connection with research and development problems in the aerospace field;
- Providing assistance to member nations for the purpose of increasing their scientific and technical potential;
- Recommending effective ways for the member nations to use their research and development capabilities for the common benefit of the NATO community.

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PREFACE

→ This publication is a bibliography representing a comprehensive survey of Guides to Aerospace Research and Development in NATO countries. It was attempted to be as complete as possible; however, only publications considered to be up to date were included. Besides guides specifically dedicated to aerospace, directories on the whole spectrum of research and development, with aerospace a sub-field only, were considered as well. As the title implies, only guides to institutions were taken into account, not publications like 'Who is Who', trade association directories, etc. The bibliography is arranged according to the type of guide, i.e., in part I aerospace-specific guides are to be found, in part II general guides with aerospace an aspect only.

The bibliography contains 56 citations, a number which does not warrant an index.

Fachinformationszentrum is grateful to the members of AGARD/TIP for their support in compiling this bibliography.

A00 AEROSPACE-SPECIFIC GUIDES / International

1 Aerospace Research Index. A Guide to World Research in Aeronautics, Meteorology, Astronomy, and Space Science. Willmore, A.P. (Birmingham Univ. (UK). Dept. of Space Research); Willmore, S.R. (eds.). ISBN 0-582-90009-3 Harlow (UK). Francis Hodgson. 1981. 597 p.
This Aerospace Research Index aims to provide a comprehensive source of reference on government establishments, industrial laboratories, colleges and universities which at about the end of 1979 were engaged on research in the group of topics commonly collected together and described as aerospace, and the related fields of aeronautics, meteorology, astronomy, and space science. This worldwide reference guide is arranged by countries in alphabetical order. Each entry is introduced with the full title of the organization, accompanied by its acronym, if used. Where available, full postal address, telephone number, details of affiliation or parent body, name of (research) director and section heads, further details of specialized research facilities, the names of other organizations with which the establishment has a close liaison or undertakes sponsored work for, are compiled. The Title and Keyword Index includes titles of all establishments listed in this reference book, and directs the user by country and entry number to the full information on that establishment. The Subject Index is compiled from the 'activity' or 'interests' entry of each organization.

2 Aviation Europe 1983/4. The Directory of U.K. and European Aviation. Anon. ISBN 0 85499 990 6; ISSN 0143-1145 Epsom (UK). Sell's Publ. Ltd. 1983. 275 p.

Aviation Europe is a classified directory devoted to the aerospace industry in the UK and Europe. It is a tool for individual buyers in defence, airport management, civil airlines, maintenance groups, trade commissions and diplomatic posts. The directory contains an Information Section with an Index to Classified Headings and Personal and International Authorities, an alphabetical list of Aerospace Companies with approximately 7,000 companies in the UK and Europe plus a number of US and other international companies with offices in Europe. A classified list of products and services is arranged alphabetically and gives an overview on aerospace products ranging from aircraft construction to ground handling equipment; special sections are here included for aviation, defence, flight instruments and ground handling/support. A general index and an advertiser's index is arranged at the end of the directory.

3 Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services. International Civil Aviation Organization, Montreal, Quebec (Canada). (In English, French, Spanish) Indicateurs des Exploitants d'Aéronefs et des Administrations et Services Aéronautiques. Designadores de Empresas Explotadoras de Aeronaves, de Entidades Oficiales y de Servicios Aeronáuticos. 53. ed. ICAO-8585/53 Jun 1983. vp.

Published irregularly (3 or 4 issues per year)

This document contains designators for aircraft operating agencies and for authorities and services associated with international aviation. It is made up of four sections: Part 1: Designators for aircraft operating agencies, aeronautical authorities and services (containing two-letter designators, telephony designators and notifying state); Part 2: Telephony designators; Part 3: Two-letter designators; Part 4: A list arranged according to country, postal address and telegraphic address.

4 Directory of European Activities in the Remote Sensing of Earth Resources. European Space Research Organisation, Neuilly-sur-Seine (France). Space Applications Div. 2. ed. ESRO/JPPC-73-20-ADD-1 N73-31372 May 1973. 207 p.

This directory has been compiled by ESRO to provide information on the European organisations and institutions actively involved in the remote sensing of earth resources. Information is presented on the different institutions, the principal investigators, the experimental programmes, the sensors and remote platforms. Brief details are provided of any cooperative programmes existing between European institutions and NASA, in particular for the Earth Resources Technology Satellite (ERTS-1) and Skylab Earth Resources Experiment Package (EREP) programmes. The directory is separated into sections by country in English in alphabetical order. Each section is sub-divided into disciplines using a subject classification system.

5 Flight International 1983. Directory of European Aviation. Ginsberg, M. (ed.). ISBN 0 617 00406 4 Sutton (UK). IPC Transport Press Ltd. 1982. 604 p.

6 IMS Directory of Spacecraft and Experiment Scientific Contacts. National Aeronautics and Space Administration, Greenbelt, MA (USA). National Space Science Data Center. NASA-TM-X-72606 IMS/SSC-9; NSSDC/WDC-A-RS Jan 1977. 190 p.

This directory of satellite experimenters is useful to nonsatellite scientists participating in the International Magnetospheric Study (IMS) to facilitate the initiation of diverse analysis projects. The directory has a Spacecraft Section and an Experimenter/Scientific Contacts Section. There is a separate page for each spacecraft giving: a) Spacecraft name; b) International designation; c) Launch date; d) Orbit-type - either geocentric, geostationary, heliocentric, or selenocentric; e) Orbit characteristics; f) Name, address, telephone number etc. of the project scientist who serves as the main scientific contact for the satellite; g) List of experiments on the satellite that includes the last name of the principal experimenter, the experiment name used by NSSDC, and the NSSDC identification number. This directory has been prepared in a loose-leaf format to allow to insert additional information or remove pages that are not of interest. Therefore, updates to this directory do not require the publication of a supplement.

7 INTERAVIA ABC 1983. World Directory of Aviation and Astronautics. Didelot, J. (ed.). 31. ed. ISSN 0074-1116 Cointrin-Geneve (Switzerland). INTERAVIA. 1983. 1427 p.

Frequency of publication: Annual. The directory describes organizations, companies and government departments; they are arranged in the part ALPHABET giving the country, and in ANALYT giving the reference number under which information on the organization or country is listed. The part WHO IS WHERE represents an alphabetical listing of the world's over 50,000 major aviation personalities. In the part ANALYT, arranged alphabetically and with various references, products, services and addresses of administrations, organizations, institutes, operations, parent and financial organizations, aircraft and power plant manufacturers, and equipment and material manufacturers are described comprehensively.

8 International Marketing Directory. Editorial Index 1982. Patten, J.W. (ed.). New York, NY (USA). McGraw Hill. 27 Dec 1982. 362 p.

Aviation Week and Space Technology v. 117(26)
This directory is published as a special issue of the journal 'Aviation Week and Space Technology'. It consists of a corporate index of aerospace industry manufacturers and service organizations worldwide, an advertisers' products index showing where to find product information of Directory advertisers, alphabetical listing of products/services comprising 2,500 aerospace industry products/services; the alphabetical format includes 78,000 products of over 7,000 manufacturers and service organizations worldwide. Further, a comprehensive products/services section, and an advertiser's index is also included.

9 Jane's All the World's Aircraft 1982-83. Taylor, J.W.R. (ed.). ISBN 0 7106-0748-2 London (UK). Jane's Publ. Co. Ltd. 1982. 865 p.

This yearbook represents a reference work on defence and transport containing also highly professional photographs received from manufacturers and official sources. It consists of an alphabetical list of advertisers, a classified list of advertisers, a glossary, a list of first flights made during the period 1 June-1 October 1982, and, as a final part, an index referring to the ten previous editions. The chapter Aircraft is arranged in alphabetical order according to countries (Argentina to Yugoslavia). In the next chapters, Homebuilt Aircraft (including racing aircraft) is described, also arranged alphabetically. Sailplanes, Microlight Aircraft and Hang Gliders, Lighter-than-Air-Airships, Balloons, RPVs and Targets, Air-launched Missiles, Spaceflight, and Aero-Engines are described comprehensively, accompanied by detailed technical data and photographs.

10 Observer's Directory of Military Aircraft. Green, W.; Swanborough, G. 2. ed. ISBN 0-668-05649-5 New York, NY (USA). Arco Publishing. 1982. 256 p.
This Military Aircraft Directory includes the 301 newest types of military aircraft, that have taken to the air up to the first quarter of 1982 throughout the world. The descriptions are grouped according to primary function and consist of three-dimensional silhouette drawings, selected photographs, dimensions, weights and performance data, production history, quantities built of all variants, country of origin and power plant. Manufacturers are mentioned in most cases.

11 World Aviation Directory, Winter 1983-84. Aviation's Standard Reference Listing. Buzan, B. (ed.). 87. ed. New York, NY (USA). Ziff-Davis Publ. Co. 1983. 2370 p.

Frequency of publication: Semi-annual. The directory contains worldwide information about aviation/aerospace companies and officials. It covers the United States, Canada and 170 countries in Europe, Central and South America, Africa and Middle East, Australia and Asia. It covers 26,100 companies, 50,000 key personnel, and 2800 products. It is divided into 18 lettered sections (A through V). In the Company Index all companies are listed in strict alphabetical order. In order to find a product and/or a service, yellow-coloured pages are arranged in form of a Buyers Guide at the back of the directory. In the Personal Index all personal names that appear anywhere in the directory are listed alphabetically by last name. An alphabetical index of international trade and consumer publications is added to the international publication section, and a government/military section contains civil and military agencies throughout the world.

A10 AEROSPACE-SPECIFIC GUIDES / National

12 Aeronautic and Space Industry of France. Groupement des Industries Françaises Aéronautiques et Spatiales (G.I.F.A.S.), 75 - Paris. (In French, English) L'Industrie Aeronautique et Spatiale Française. Paris (France). G.I.F.A.S. 1981. 120 p.

This brochure represents a study which illustrates the different aspects of the French Aeronautics and Space Industry, its structure, international policy, its research, development, testing and production facilities, and its products. The study consists of the parts: 'The Industry and its Products'; 'Power Plants'; 'Space'; 'Research and Testing'; 'Products'; 'Equipment', and a description of activities of manufacturers belonging to GIFAS Equipment Group.

13 Aeronautic and Space Industry of France. Materials for Space and Aeronautics. Groupement des Industries Françaises Aéronautiques et Spatiales (G.I.F.A.S.), 75 - Paris. (In French, English) L'Industrie Aéronautique et Spatiale Française. Les Matériels Aéronautiques et Spatiaux. Paris (France). G.I.F.A.S. 1981. 151 p.

This catalogue contains the names of 18 French manufacturers in the field of aeronautics and astronautics. It describes their products in a very detailed way, accompanied by photographs and drawings, and information about systems and power plants installed, as well as descriptions of systems for engine parameters and performance.

14 Aviation Directory of Canada. Whittington, H. (ed.). Toronto (Canada). MacLean Hunter Ltd. Apr 1983. 140 p.
Canadian Aviation v. 56(4)

The directory is an annex to the journal 'Canadian Aviation', Apr 1983, p. 53-121. It describes Major Air Carriers, Air Carriers - fixed wing, Air Carriers - rotary wing, Foreign Air Carrier Offices, the Industry, Associations, Publications, Academic Institutions, Government Aviation Departments, and Sources of Supply and Service.

15 Canada in Space 1982. Ministry of State for Science and Technology, Ottawa, Ontario (Canada). Interdepartmental Committee on Space. ISBN 0-662-12007-8 Ottawa, Ontario (Canada). Minister of Supply and Services. 1982. 94 p.
This publication has been prepared under the auspices of the Interdepartmental Committee on Space with the assistance of the member departments and agencies. The activities associated with space described in this bibliography are generally broken down into Space Sciences, Communications, Remote Sensing, and Satellite-aided Navigation. Each topic is addressed separately. The section Organizations Active in Space provides a brief overview of space activities undertaken by federal

departments and agencies within their mandates. The second section provides information on Telelobe Canada and Telesat Canada. The third section contains information on some of the activities of Canadian universities in the space field. The section Canadian Space Industry provides brief information on Canadian firms which are fully or partly involved in the space industry, including established consultants in the field.

16 Directory and Classified Index of Member Companies. Society of British Aerospace Companies Ltd., London (UK). Aug 1982. 4th p.
This is an alphabetical list of member companies of the British aerospace companies indicating their products and aerospace materials. The directory is divided into four categories and groups of activities as follows: Ordinary Members, Ordinary Members (overseas), Associate Members, Associate Members (overseas). Information concerning telephone numbers, telex numbers, and a Classified Index of Members' Products as well as of Members' Services provides a comprehensive survey to the user of this directory.

17 Directory of Aerospace Safety. Specialized Information Sources. Fullerton, E.A.; Rubens, L.S. National Aeronautics and Space Administration, Washington, DC (USA). NASA-CR-121286 N74-10887 Oct 1973. 243 p.
The purpose of this directory is to make available to the aerospace safety community a handbook of organizations and experts in specific, well-defined areas of safety technology in USA. It is designed for the safety specialist as an aid for locating both information sources and individual points of contact (experts) in engineering related fields. The directory will contribute as a working guide to those who seek specialized safety information relative to aerospace technology. 171 organizations and their staff members provide technical information in the form of documentation, data and consulting expertise. To present the contents of this directory in an easy reference form, two indexes were developed using keyword terms to identify and highlight the expertise of the organizations and their staff members. These keywords were selected to describe the information sources and their experts with meaningful terms that have a direct application to safety related problem areas.

18 Directory of Aircraft Survivability Specialists and their Affiliations. Naval Weapons Center, China Lake, CA (USA). Joint Technical Coordinating Group on Aircraft Survivability. AD-A096 259; N81-21066 Dec 1980. 135 p.
The purpose of the directory is to provide a comprehensive listing of aircraft nonnuclear vulnerability/survivability specialists throughout major aerospace and passive protection manufacturers and Government agencies including additional organizations that perform related efforts. The directory is made up of four sections. Each section is identified as follows: 1) Aircraft, remotely piloted vehicles, power plant, and passive protection manufacturers; 2) Specialists listed alphabetically within agencies under each of the services - Air Force, Army, Navy and Marine including Central Office Members and other Government Agencies; 3) Software organizations listed alphabetically, and personnel contact(s) within each organization; 4) Index of all personnel listed in previous sections. The directory comprises information on: US manufacturers, US Government Agencies, Department of the Air Force, Department of the Army, Marine Corps, Department of the Navy and other Government Agencies. A Personnel Index and Headings of addresses for mailing through official channels are arranged after the index section.

19 Flight International 1983. Directory of British Aviation incorporating Who's Who in British Aviation. Ginsberg, M. (ed.). ISBN 0 617 00374-2 Sutton (UK). IPC Transport Press Ltd. 1983. 481 p.
This directory has been laid out to make it compatible with the 'Flight International Directory of European Aviation' and to simplify its use by readers. This issue is divided into nine sections including Who's Who in British Aviation. The sections are entitled: Civil Aviation, Military Aviation, Airports (this is a comprehensive list of all airports licensed by the Civil Aviation Authority), Air Transport, Recreational Flying, Aviation Organisations (including learned bodies, professional societies, trade unions, recognized international aviation bodies), Trade and Industry (this is a comprehensive list of officially appointed UK sales outlets), Press (including aeronautical press, aviation bookshops and freelance and aviation journalists), Aviation Training, Who's Who of British Aviation and, finally an alphabetic index of organizations.

20 General Aviation Guide of France 1983. Delage, M. (In French) Guide de l'Aviation Générale France 1983. 16. ed. ISBN 2.7025.0030.7 Paris (France). Editions Lavauzelle. 1982. 772 p.
This guide is prepared for pilots and aviation specialists. It consists of an aeronautical map of France and describes the air traffic in the Paris region, the organisation of civil aviation in France, restricted, dangerous and regimented areas, notions of aeronautical navigations, visual flight rules, meteorology, direction and speed of wind, radio navigation (radio support), table of conversion, a list of industries and suppliers of lightweight airplanes. An international vocabulary, abbreviations and aeronautical terms, a map of airports, an alphabetical list of airports and 22 foreign civil airports represent a comprehensive survey to private pilots and aviation personnel.

21 German Aerospace Annual 1983. Information-Documentation-Addresses. Reuss, T.T. (ed.). (In German) Jahrbuch der Luft- und Raumfahrt 1983. Information-Dokumentation-Adressen. 32. ed. ISSN 0075-269 X Mannheim (Germany, F.R.). Südwestdeutsche Verlagsanstalt. 1983. 566 p.
Headings also in English and French
The guide containing information documentation and addresses gives a comprehensive survey on developments and events in the field of aeronautics and astronautics in the Federal Republic of Germany. This Aerospace Annual comprises a list of persons (in alphabetical order), a list (in three languages) of institutions and companies with special regard to their production program. It is arranged in 13 sections with detailed facts and figures about e.g. the official organization of aviation, air traffic, German aeronautical and space research and science, air and space law, aviation and aerospace press and publishers, companies and societies in aircraft and aerospace economy, and a trade directory.

22 Luftwaffe Pocket Guide to the Aviation- and Space-Press 1983. Deutsche Luftwaffe A.G., Koeln (Germany, F.R.). Abt. Presse und Information. (In German) Luftwaffe Taschenbuch der Luft- und Raumfahrt-Press 1983. ISSN 0419-9030 Seefeld/Obb. (Germany, F.R.). Kroll. 1982. 334 p.
Frequency of publication: Annual. The guide contains comprehensive information on the following topics: Dates and events, aviation and space writers, publications and

documentations, commerce and industry, air traffic, science and research, government authorities, associations and organizations not only related to Germany. It contains a separate section with detailed facts about Luftwaffe A.G., and an index of names with reference to the corresponding entries.

23 NATA Membership Directory 1983. Representing FBO's and Air Taxicab across the Nation. National Air Transportation Association, Washington, DC (USA). 1983. 138 p.
The National Air Transportation Association (NATA) of the USA published its annual Membership Directory in order to promote communication with and among NATA Members. The guide is divided into the following parts: Members of NATA Board and Committees; main section with alphabetically arranged member institutions, an index to this section arranged geographically by US-States and a list of associate and affiliate members.

24 PROSPACE Catalog. Prospace, 91 Evry (France). 2. ed. 1979. 303 p.
This guide describes the 42 French companies and organizations active in the space sector, which have founded a special office called 'PROSPACE'. The description of the member organizations includes name, address data, budget, associated firms, representatives, space activities and all other activities. The second part is an alphabetic list of products, facilities and services, available from 'prospace' members and the third part gives detailed information concerning the activities, products, facilities and services.

25 Remote Sensing Procurement Package: Remote Sensing Industry Directory. Public Technology, Inc., Washington, DC (USA). E82-10251; N82-24529 Contract NAS13-129 Jun 1981. 272 p.
This directory is part of a package of tools designed to assist state and local governments with remote sensing procurements. The information in this directory was obtained from a mail survey of remote sensing firms and organizations of USA. The directory contains information on 143 firms and organizations. They are listed in alphabetical order. Information on each of these firms is contained on four separate pages. Each page covers a separate category of information. 1) Summary information (e.g. organization name and address, years in business, projects completed, region served etc. 2) Facilities and special equipment (e.g. detailed information on the types of facilities and equipment owned by the organization). 3) Products and services provided (e.g. information on the specific types of products). 4) Remote sensing equipment/systems provided.

26 The Aerospace Profiles Manual. Society of British Aerospace Companies Ltd., London (UK); British Overseas Airways Corp., London. Nuneaton (UK). Industry Services International Ltd. 1982. vp.
Aerospace Profiles Manual is the latest restyled and re-named version of the former British Aerospace Vendor Profile Manual. The Manual is a useful tool for the British manufacturing aerospace industry in its relations with its customers; it is intended for use by contracts departments and buying authorities. The Company Index is a representative section covering a variety of manufacturing capabilities. The classified Product/Company Index represents a guide to the aerospace industry and is arranged in alphabetical order. Finally, the classified Services Company Index shows a consolidated list of the services headings.

A20 GENERAL GUIDES INCLUDING

AERONAUTICS and ASTRONAUTICS /

International

27 European Research Centres. Vol. 1 and 2. A Directory of Organizations in Science and Technology, Agriculture and Medicine. Williams, T.I. (ed.). 5. ed. ISBN 0-85290012-5 Harlow (UK). Longman. 1982. 1920 p.
Published in two volumes; previous ed.: European Research Index
This is a guide to research organizations in Eastern (not USSR) and Western Europe. In the main part the institutions with detailed information including activities, contract work and publications are listed by countries in alphabetical order, beginning with international organizations. The 'Titles of Establishments Index' lists the organizations alphabetically, and in case of non-English names the English translation is given. The 'Subject Index' is a compilation of the activities described in the main part.

28 Guide to World Science. Vol. 16. International Science. Pernet, A. (ed.). 2. ed. ISBN 0-85280-031-2 Guernsey (UK). Francis Hodgson. 1976. 294 p.
The Guide to World Science is published in 24 volumes. The purpose of this guide is to provide a reference source arranged by country and by group of countries. The guide includes information on pure and applied sciences, engineering, medicine, and to a certain extent, social sciences. Each volume is divided into two main parts. The first is an introductory text and the second a directory of the most important international scientific establishments.

29 International Research Centers Directory. Kruzas, A.T.; Gill, K. (eds.). 1. ed. ISBN 0-8103-0465-1 Detroit, MI (USA). Gale Research Co. 1982. 173 p.
The first ed. of the IRCD is being published in three parts. Issue 3 contains cumulative indexes to issues 1-3
The International Research Centers Directory is a current and continuing guide to overseas government, university, independent non-profit, and commercial research and development centers and institutes. IRCD does not include entries for the United States. IRCD is being published in three parts at 4-6 month intervals. Each issue contains approximately 500 entries, representing research and development installations, institutes, centers, laboratories, data collection and analysis centers etc. Also listed are foundations, councils, government ministries or offices, universities and other organizations which sponsor, administer, coordinate, or otherwise support major research programs and/or facilities within a country. IRCD contains the following indexes: 1. Name and Keyword Index (arranged alphabetically by name and by subject keywords). The index is cumulated in successive issues of this first edition. 2. Country Index (an alphabetical listing of countries, including those from previous issues of the first edition of IRCD).

30 Yearbook of International Organizations 1983/1984. Organization Descriptions and Index. Union of International Associations, Brussels (Belgium). 20.

ed. ISBN 3-598-21856-7; ISSN 0084-3814 Muenchen (Germany, F.R.). Saur. 1983. Separate pagination

Published with two supplementary volumes. Vol. 2: Geographic volume and Vol. 3: Subject volume

The 20th edition of the 'Yearbook of International Organizations' has a new structure. It is now published in 3 volumes. The main volume contains 19,579 organizations covering every field of human activity, and is arranged in 13 categories of different types of organizations. The descriptions of the organizations include, besides address data, activities and programmes, commissions, personal names. The multilingual index gives access to the guide via names in all working languages, former names, additional keywords in names and descriptions of activities, personal names, abbreviations and organizations cited as sponsoring bodies. The main volume is supplemented by two additional volumes. Volume 2 is the geographic volume, a country directory of secretariats and memberships. Volume 3 is the subject volume, a classified directory by subject and region.

A30 GENERAL GUIDES INCLUDING

AERONAUTICS and ASTRONAUTICS / National

31 **Defense Industry Organization Services.** Anon. Washington, DC (USA). Carroll Publ. Co. [nd]. vp.

Published as loose-leaf edition

The Defense Industry Organization Service is updated every three months and gives details of more than 130 of the top US defense contractors, the industrialists who represent the major portion of the defense budget, including all major aerospace firms and electronics companies. Close to 10,000 people are mentioned. The Service has extensive alphabetic and keyword indices.

32 **Encyclopedia of Associations '83. Vol. 1. National Organizations of the U.S.** Akey, D.S.; Gruber, K.; Leonard, C. (eds.). 17. ed. ISBN 0-8103-0147-4; ISSN 0071-0202 Detroit, MI (USA). Gale Research Co. 1982. 1781 p.

Published in 2 volumes. Vol.1: sections 1-7 and Vol.2: sections 8-17 and index. Frequency of publication: Approx. annual. This encyclopedia is a comprehensive source of detailed information concerning nonprofit American membership organizations of national scope. In it can be found the location, size, objectives and many other essential aspects of several thousand trade associations, professional societies, labor unions, etc. The edition provides detailed descriptions of over 16,500 organizations. The encyclopedia comprises 17 sections and an alphabetical index to organization names and keywords.

33 **Encyclopedia of Associations '83. Vol. 2. Geographic and Executive Indexes.** Akey, D.S.; Gruber, K.; Leonard, C. (eds.). 17. ed. ISBN 0-8103-0148-2; ISSN 0071-0202 Detroit, MI (USA). Gale Research Co. 1982. 993 p.

This volume consists essentially of reclassification of the material which is arranged in Vol.1 (National Organizations of the U.S.), according to fields of interest. It contains 2 sections: 1. Geographic Index (USA, Canada, Foreign) and 2. Executive Index.

34 **Encyclopedia of Associations '83. Vol. 3. New Associations and Projects.** Akey, D.S.; Gruber, K.; Leonard, C. (eds.). 17. ed. ISBN 0-8103-0130-X; ISSN 0071-0202 Detroit, MI (USA). Gale Research Co. 1982. 122 p.

Supplement to Vol.1, issue number 1, Oct 1982, entries 16,520-17,275. New Associations and Projects: Periodic reports listing additional associations not included in Vol.1, interedition service.

35 **Government Research Centers Directory.** Kruzas, A.T.; Gill, K. (eds.). 2. ed. ISBN 0-8103-0462-7; ISSN 0270-4811 Detroit, MI (USA). Gale Research Co. 1982. 434 p.

This is a guide to US government research and development centers, institutes, laboratories, bureaus, test facilities, experimental stations, data collection and analysis centers, research coordinating offices in agriculture, art, business, education, energy, engineering, medicine, military science and basic and applied sciences. The directory contains 1,642 entries representing a comprehensive descriptive inventory of the research program of the Federal Government. It contains 14 sections, arranged alphabetically by the specific name of each reporting unit. Further, Government Research Centers Directory contains a Name and Keyword Index (arranged alphabetically by name and by principal subject keywords), an Agency Index (consisting of a classified arrangement of all agencies) and a Geographic Index (providing access to entries according to geographic location; this index is arranged alphabetically by states; entries within each state are arranged alphabetically by cities).

36 **Guide to World Science. Vol. 01. United Kingdom and Republic of Ireland.** Harvey, A.P. (ed.). 2. ed. ISBN 0-85280-380-X Guernsey (UK). Francis Hodgson. 1974. 259 p.

The Guide to World Science is published in 24 volumes. The purpose of this guide is to provide a reference source arranged by country and by group of countries. The guide includes information on pure and applied sciences, engineering, medicine, and to a certain extent, social sciences. Each volume is divided into two main parts. The first is an introductory text and the second a directory of the most important scientific establishments within the country or group of countries.

37 **Guide to World Science. Vol. 02. France.** Allen, J. (ed.). 2. ed. ISBN 0-85280-390-7 Guernsey (UK). Francis Hodgson. 1975. 328 p.

The contents of the guide is described with vol. 1

38 **Guide to World Science. Vol. 03. Germany.** Salander, C. (ed.). 2. ed. ISBN 0-85280-400-0 Guernsey (UK). Francis Hodgson. 1974. 245 p.

The contents of the guide is described with vol. 1

39 **Guide to World Science. Vol. 04. Italy.** Moore, H. (ed.). 2. ed. ISBN 0-85280-410-5 Guernsey (UK). Francis Hodgson. 1975. 187 p.

The contents of the guide is described with vol. 1

40 **Guide to World Science. Vol. 05. The Netherlands.** Forbes, D.B. (ed.). 2. ed. ISBN 0-85280-420-2 Guernsey (UK). Francis Hodgson. 1975. 160 p.

The contents of the guide is described with vol. 1

41 **Guide to World Science. Vol. 06. Belgium.** Walsh, S. (ed.). 2. ed. ISBN 0-85280-430-X Guernsey (UK). Francis Hodgson. 1975. 230 p.

The contents of the guide is described with vol. 1

42 **Guide to World Science. Vol. 07. Scandinavia.** Forbes, D.B. (ed.). 2. ed. ISBN 0-85280-440-7 Guernsey (UK). Francis Hodgson. 1976. 360 p.

The contents of the guide is described with vol. 1

43 **Guide to World Science. Vol. 09. Spain and Portugal.** Richards, R.A.C. (ed.). 2. ed. ISBN 0-85280-460-1 Guernsey (UK). Francis Hodgson. 1974. 252 p.

The contents of the guide is described with vol. 1

44 **Guide to World Science. Vol. 12. Greece, Turkey, and the Arab States.** Wheeler, S.E.L.; Shah, K.T. (eds.). 2. ed. ISBN 0-85280-490-3 Guernsey (UK). Francis Hodgson. 1976. 236 p.

The contents of the guide is described with vol. 1

45 **Guide to World Science. Vol. 22. United States of America. Part 1.** Atkins, A.G. (ed.). 2. ed. ISBN 0-85280-091-6 Guernsey (UK). Francis Hodgson. 1975. 234 p.

The contents of the guide is described with vol. 1

46 **Guide to World Science. Vol. 23. United States of America. Part 2.** Atkins, A.G. (ed.). 2. ed. ISBN 0-85280-101-7 Guernsey (UK). Francis Hodgson. 1975. 210 p.

The contents of the guide is described with vol. 1

47 **Guide to World Science. Vol. 24. Canada.** Doucet, C.D. (ed.). 2. ed. ISBN 0-85280-031-2 Guernsey (UK). Francis Hodgson. 1975. 277 p.

The contents of the guide is described with vol. 1

48 **Industrial Research in the United Kingdom. A Reference Guide to Organizations and Establishments.** Williams, T.I. (ed.). 9. ed. ISBN 0-582-90008-5 Harlow (UK). Francis Hodgson. 1980. 872 p.

Previous ed.: Industrial Research in Britain
This bibliography is a successor to eight editions of Industrial Research in Britain that have appeared since 1946. It represents a guide to all research in the United Kingdom that is relevant to industry, regardless of where it is conducted. It includes private industry and research associations, public corporations and government departments, universities and polytechnics, trade and development associations, learned societies, and professional bodies. The bibliography is arranged in 7 sections according to the above mentioned criteria. An Index by Title and Keyword, a Personal Name Index, and a Subject Index facilitate access to the information required.

49 **Industrial Research Laboratories of the United States.** Jacques Cattel Press. Tempe, AZ (USA). 17. ed. ISBN 0-8352-1360-9; ISSN 0073-7623 New York, NY (USA). R.R. Bowker. 1982. 763 p.

Published biennial

The 17. edition of this directory contains information on 9,958 laboratories belonging to 6,254 organizations in the United States and is a compilation of the research and/or development capabilities of these industrial organizations. It also includes non-profit or privately financed firms doing research, development, engineering, consulting or behavioural research in support of and for industry. The parent organizations are listed alphabetically followed by their laboratories, divisions, etc. The description of each unit includes R and D activities. Three indexes are arranged as follows: Geographically under the city and state in alphabetical sequence, alphabetical listing of all persons, and installations grouped under an industry classification.

50 **Inventory of Belgian Research Centers with a Library or a Documentation Service.** Verougstraete, J. (comp.). Centre National de Documentation Scientifique et Technique, Brussels (Belgium). (In French, Dutch) Inventaire des Centres Belges de Recherche disposant d'une Bibliothèque ou d'un Service de Documentation. Inventaris van Belgische Onderzoekscentra die over een Bibliotheek of Documentatiedienst beschikken. 4. ed. ISBN 2-87093-001-1 Brussels (Belgium). Bibliotheque Royale Albert I^{er}. 1982-1983. 468 p.

This bibliography contains a listing of 1090 research centers providing comprehensive information on science and technology, politics, sociology (i.e. pure and applied sciences, engineering, agriculture, biology, medicine, pharmacy, economy, social sciences, and religion). These research centers furnish information and documentation within their scope. They are arranged according to their locations, within each city the units are arranged in alphabetical order. The bibliography is made up of four indexes arranged as follows: Index by units, index of persons, subject index (in French and Dutch), and index by data bases with their corresponding information system. These indexes always refer to the main entry.

51 **Members Directory.** Martin, J. (ed.). American Association of Small Research Companies, West Chester Pike, Upper Darby, PA (USA). Sep 1982. 78 p.

The American Association of Small Research Companies was organized to obtain a more equitable share of RD funding for small RD and high technology companies. They are well described in this directory which is arranged as follows: Section 1: Geographical distribution of members, Section 2: Technical fields and member identification numbers, Section 3: Alphabetical list of members with description of capabilities and/or areas of interest

52 **New Research Centers.** Watkins, M.M.; Ruffner, J.A. (eds.). ISBN 0-8103-0457-0; ISSN 0028-6591 Detroit, MI (USA). Gale Research Co. 1982. 160 p.

An inter-edition supplement to the 7. ed. of 'Research Centers Directory'. This, the second issue of New Research Centers, is the final supplement to the 7. edition of Research Centers Directory. Its purpose is to bring to the attention of RCD's users research centers which have not been included in the main volume or the first supplement. These may be newly established centers or ones which the editorial staff only recently identified even though they are not newly founded. The bibliography is made up of 16 sections, arranged alphabetically and describing the

activities, services and governances of the individual research centers. An institutional and a subject index is also added.

53 Research Centers Directory. Watkins, M.M.; Ruffner, J.A. (eds.). 8. ed. Detroit, MI (USA). Gale Research Co. 1983. 1083 p.
Frequency of publication: Approx. every 3 years. The directory contains listings for 6,314 research units; included are universities, colleges, technological institutes, professional schools, and other nonprofit research organizations in the United States and Canada. The main body of the directory is divided into sixteen broad classes, within each class the entries are arranged alphabetically under the name of the parent institution, or under the name of the center, in case of independent organizations the Alphabetic Index of Research Centers is arranged by the names under which research units operate. The Institutional Index directs the user to a specific center when the educational institution with which it is connected is known, but not the center's exact name. The Subject Index contains information furnished by each research center in describing its principal field or fields of research. These information have been analyzed, and as many specific subjects as possible for each center have been entered in this index. This edition is supplemented by New Research Centers.

54 The Unique 3-in-1 Research and Development Directory. Anon. 21. ed. Washington, DC (USA). Government Data Publications. 1983. vp.
This 21. consecutive annual edition encompasses a 12-month span of Research and Development work on all conceivable products and processes, civilian, space or military. Each of the three directories contained in this volume is complete in itself. Directory I, organized by companies, lists companies and other organizations having received government R and D contracts, with each company in turn geographically subdivided by its specific facilities involved. The companies and organizations are arranged in alphabetical order. Directory II, organized by agencies, lists the agencies awarding the contracts in geographic order. Within each

agency the companies receiving the contracts, are listed alphabetically, so that all the contracts to a certain firm from a specific agency are grouped together. Directory III, organized by nature of work, lists the contracts awarded in 6 categories which are subdivided into sequence by awardees.

55 The 1983 Corpus Almanac of Canada. Vol. 1 and 2. Fawcett, M.J. (ed.). ISBN 0-919217-24-9 Don Mills, Ontario (Canada). Corpus Information Services. 1983. Separate pagination
Published annually

This bibliography contains, in a very wide range, information about facts concerning Canada. It gives a comprehensive overview on current events, the Canadian Government, the Canadian Constitution, the Armed Forces, educational institutions, libraries, newspapers and magazines, book publishers, communications and media, the system of taxation, provincial and territorial governments, etc. A detailed index with reference to the corresponding sections is arranged in the final part of the almanac.

56 VADEMECUM of German Institutions devoted to Teaching and Research. A Directory of Scientific Life. Stifterverband fuer die Deutsche Wissenschaft e.V., Essen (Germany, F.R.). (In German) VADEMECUM Deutscher Lehr- und Forschungsstätten. Ein Handbuch des Wissenschaftlichen Lebens. 7. ed. Essen (Germany, F.R.). Gemeinnützige Verwaltungsgesellschaft fuer Wissenschaftspflege. 1978. 1572 p.

This bibliography is intended as a guide to German activities and institutions in science and technology. It is subdivided into four parts under the following headings: A: Locations in science and education, e.g. institutions with public funding, universities, and technical universities. B: Institutions devoted to teaching and research with over 12,000 catch-words, 7,000 institutions and 15,000 persons. C: Survey on scientific life in Germany. D: Index (persons/places/subjects).

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